APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,732	01/02/2004	Uri Elzur	14230US03	3592

23446   7590   05/25/2010
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
SHIN, KYUNG H

ART UNIT	PAPER NUMBER
2443	

MAIL DATE	DELIVERY MODE
05/25/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/751,732	ELZUR, URI
Office Action Summary	Examiner	Art Unit	
	Kyung Hye Shin	2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>Petition decisioned 3-30-10</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-46</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-46</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All   b) ☐ Some * c) ☐ None of:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____.
   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

NON-FINAL ACTION

1.   This action is responding to application Petition decision dated 3-30-2010, and

amendments filed 1-21-2010. Claims **1 - 46** are pending. Claims **1, 20, 21, 22, 32, 45**

are independent.   This application file date is 1-2-2004.

Response to Arguments

2.   Based on petition decision on 3-30-2010, new grounds of rejection have been

entered.

        Applicant has amended Specification of the present application, thereby making

the present application a CONTINUATION-IN-PART of the previously co-pending U.S.

Application No. **10/230,643**, now issued U.S. Patent No. 7,295,555 B2.   That

Application has an actual filing date of **August 29, 2002** and an earliest Provisional file

date of **March 8, 2002**. Thus, priority date for invention is now **March 8, 2002**.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

4.   Claim **20** is rejected under 35 U.S.C. 101 because the claimed invention is

directed to **non-statutory** subject matter as follows.

        Claim **20** is to be construed as a system of *"software per se"*, unless the

specification makes clear the only reasonable interpretation of the word *"system"* is

limited to hardware inclusive tangible embodiments.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6.   Claims **1 - 13, 16, 18 - 25, 29 - 31, 45, 46** are rejected under 35 U.S.C. **102(a)** as

being anticipated by **Bailey et al.** (XP-002272247: "TCP ULP Framing Protocol (TUF)

draft-ietf-tsvwg-tcp-ulp-frame-01)

Regarding Claim 1, Bailey discloses a system for handling transport protocol segments

(TPSes), comprising: a receiver that receives an incoming TPS (Bailey pg 5, ll 10-12:

delivers shimmed (header added) ULPDUs to receiving TUF (TCP Upper Layer

Protocol) layer, TUF removes shim and delivers ULPDUs to ULP; pg 6, ll 4-6: recognize

ULPDUs by processing each TCP segment independently), the incoming TPS

comprising an aligned upper layer protocol (ULP) header and a complete ULP data unit

(ULPDU) (Bailey pg 5, ll 12: removes shim (header) and delivers ULPDU to TUF),

wherein the receiver directly places the complete ULPDU into a host memory. (Bailey

pg 5, ll 20-22: place data (framed ULPDU) in memory on host; pg 6, ll 7-11:

implementing direct data placement for TCP-based ULPs)

Regarding Claim 2, Bailey discloses the system according to claim 1, wherein the

receiver comprises a network subsystem and the host memory, wherein the network

subsystem receives the incoming TPS and directly places data of the complete ULPDU

into the host memory. (Bailey pg 5, ll 20-22: place data (framed ULPDU) in memory on

host; pg 6, ll 7-11: implementing direct data placement for TCP-based ULPs)

Regarding Claim 3, Bailey discloses the system according to claim 1, wherein the

network subsystem comprises a network interface card (NIC) or a network controller.

(Bailey pg 7, ll 30-32: direct data placement by NIC (network interface controller) to

place data directly from network into designated application buffers)

Regarding Claim 4, Bailey discloses the system according to claim 1, wherein the

ULPDU comprises a framing protocol data unit (FPDU). (Bailey pg 13, ll 13-15: TUF

sends groups of one or more complete ULPDUs in a framing protocol data unit (FPDU))

Regarding Claim 5, Bailey discloses the system according to claim 4, wherein the

FPDU comprises a data unit created by a ULP using a marker-based ULPDU aligned

(MPA) framing protocol. (Bailey pg 13, ll 13-15: TUF sends groups of one or more

complete ULPDUs in a framing protocol data unit (FPDU))

Regarding Claim 6, Bailey discloses the system according to claim 1, wherein the

aligned ULP header comprises an aligned FPDU header. (Bailey pg 13, l 5: shim layer

PDUs called FPDU; pg 5, ll 10-12: delivers shimmed (header added) ULPDUs to

receiving TUF (TCP Upper Layer Protocol) layer, frame aligned)

Regarding Claim 7, Bailey discloses the system according to claim 6, wherein the
aligned ULP header comprises the aligned FPDU header disposed adjacently to a TPS
header of the TPS. (Bailey pg 13, l 5: shim layer PDUs called FPDU; pg 5, ll 10-12:
delivers shimmed (header added) ULPDUs to receiving TUF (TCP Upper Layer
Protocol) layer, frame aligned)

Regarding Claim 8, Bailey discloses the system according to claim 1, wherein the
aligned ULP header is disposed a preset length away from a TPS header of the TPS.
(Bailey pg 13, l 5: shim layer PDUs called FPDU; pg 5, ll 10-12: delivers shimmed
(header added) ULPDUs to receiving TUF (TCP Upper Layer Protocol) layer, frame
aligned; alignment implies length from header) for ULPDU)

Regarding Claim 9, Bailey discloses the system according to claim 1, wherein the
aligned ULP header is disposed a particular length away from the TPS header, the
particular length being related to information in a field in the TPS. (Bailey pg 13, l 5:
shim layer PDUs called FPDU; pg 5, ll 10-12: delivers shimmed (header added)
ULPDUs to receiving TUF (TCP Upper Layer Protocol) layer, frame aligned; alignment
implies length from header for ULPDU)

Regarding Claim 10, Bailey discloses the system according to claim 9, wherein the

field comprises a marker field. (Bailey pg 11, l 36 - pg 12, l 4: determine ULPDU starts

at beginning of segment, perform ULP aware direct placement of ULPDU based on

header placement)

Regarding Claim 11, Bailey discloses the system according to claim 1, wherein the

receiver is a flow-through receiver. (Bailey pg 5, ll 10-12: TCP communications receiver)

Regarding Claim 12, Bailey discloses the system according to claim 1, wherein the

TPS comprises a transmission control protocol (TCP) segment. (Bailey pg 5, l 6; pg 5, ll

10-11: TUF utilizes TCP communications for layered communications)

Regarding Claim 13, Bailey discloses the system according to claim 12, wherein the

TCP segment is part of a TCP byte stream. (Bailey pg 5, l 6; pg 5, ll 10-11: TUF utilizes

TCP communications for layered communications)

Regarding Claim 16, Bailey discloses the system according to claim 1, wherein the

incoming TPS comprises information that is used to place the complete ULPDU in the

host memory. (Bailey pg 5, ll 10-12: delivers shimmed ULPDUs (attached headers) to

TUF, removes headers and delivers to ULP; pg 5, ll 20-22: use information in framed

ULPDUS to place data in memory of host)

Regarding Claim 18, Bailey discloses the system according to claim 1, wherein the

incoming TPS comprises an out-of-order incoming TPS. (Bailey pg 4, ll 35-38: TCP

segments arrive out of order, TUF protocol finds ULPDU headers in TCP stream even

when TCP segments are out of order, recovery of out of order ULPDUs processing)

Regarding Claim 19, Bailey discloses the system according to claim 1, wherein the

receiver does not store only a portion of the complete ULPDU. (Bailey pg 11, l 36 – pg

12, l 4: ULPDU completely contained with TCP segment; pg 7, ll 30-32: direct data

placement from network interface into application buffers)

Regarding Claim 20, Bailey discloses a system for handling TPSes, comprising: a

sender that sends a TPS, the sent TPS comprising an aligned ULP header and one or

more complete ULPDUs. (Bailey pg 11, l 36 - pg 12, l 4: ULPDU completely contained

with TCP segment; pg 7, ll 30-32: direct data placement by network interface into

application buffers)

Regarding Claim 21, Bailey discloses a method for handling TPSes, comprising:

aligning an FPDU header in a known position in a TPS with respect to a TPS header;

and placing a complete FPDU in the TPS. (Bailey pg 11, l 36 - pg 12, l 4: ULPDU

completely contained with TCP segment; pg 7, ll 30-32: direct data placement by

network interface into application buffers)

Regarding Claim 22, Bailey discloses a method for handling TPSes, comprising:

receiving an incoming TPS, the TPS comprising a complete FPDU and an FPDU

header in a known position with respect to a TPS header. (Bailey pg 13, l 5: shim layer

PDUs called FPDU; pg 5, ll 10-12: delivers shimmed (header added) ULPDUs to

receiving TUF (TCP Upper Layer Protocol) layer, frame aligned; alignment implies

length from header for ULPDU)

Regarding Claim 23, Bailey discloses the method according to claim 22, wherein the

FPDU header is adjacent to the TPS header. (Bailey pg 13, l 5: shim layer PDUs called

FPDU; pg 5, ll 10-12: delivers shimmed (header added) ULPDUs to receiving TUF (TCP

Upper Layer Protocol) layer, frame aligned; alignment implies length from header for

ULPDU)

Regarding Claim 24, Bailey discloses the method according to claim 22, further

comprising: performing layer 2 (L2) processing, layer 3 (L3) processing and layer 4 (L4)

processing on the incoming TPS by a network subsystem. (Bailey pg 5, l 6; pg 5, ll 10-

11: TUF utilizes TCP communications for layered communications; TCP, IP, lower layer

(L2) communications processing; TCP/IP processing (implies L3, L4 processing))

Regarding Claim 25, Bailey discloses the method according to claim 24, further

comprising: obtaining FPDU length information from the FPDU header. (Bailey pg 13, l

5: shim layer PDUs called FPDU; pg 5, ll 10-12: delivers shimmed (header added)

ULPDUs to receiving TUF (TCP Upper Layer Protocol) layer, frame aligned; alignment

implies length from header for ULPDU)

Regarding Claim 29, Bailey discloses the method according to claim 24, further

comprising: performing ULP processing on the incoming TPS by the network

subsystem, wherein the L2 processing, the L3 processing, the L4 processing and the

ULP processing can occur in parallel or in any order. (Bailey pg 5, l 6; pg 5, ll 10-11:

TUF utilizes TCP communications for layered communications; TCP, IP, lower layer

(L2) communications processing; TCP/IP processing (implies L3, L4 processing))

Regarding Claim 30, Bailey discloses the method according to claim 29, wherein the

L2 processing, the L3 processing, the L4 processing and the ULP processing do not

occur in the listed order in a receiver. (Bailey pg 5, l 6; pg 5, ll 10-11: TUF utilizes TCP

communications for layered communications; TCP, IP, lower layer (L2) communications

processing; TCP/IP processing (implies L3, L4 processing); pg 4, ll 35-38: if TCP

segments arrive out of order, TUF protocol finds ULPDU headers in TCP stream even

when TCP segments are out of order, recovery of out of order ULPDUs processing)

Regarding Claim 31, Bailey discloses the method according to claim 29, wherein the

ULP processing, the L4 processing, the L3 processing and the L2 processing do not

occur in the listed order in a transmitter.   (Bailey pg 5, l 6; pg 5, ll 10-11: TUF utilizes

TCP communications for layered communications; TCP, IP, lower layer (L2)

communications processing; TCP/IP processing (implies L3, L4 processing); pg 4, ll 35-

38: TCP segments arrive out of order, TUF protocol finds ULPDU headers in TCP

stream even when TCP segments are out of order, recovery of out of order ULPDUs

processing)

Regarding Claim 45, Bailey discloses a method for handling TPSes, comprising: (a)

receiving an incoming TPS, the TPS comprising a complete FPDU and an FPDU

header in a known position with respect to a TPS header (b) performing layer 2 (L2)

processing on the incoming TPS; (c) performing layer 3 (L3) processing on the incoming

TPS; (d) performing layer 4 (L4) processing on the incoming TPS; and (e) performing

ULP processing on the incoming TPS, wherein the performing of (b), (c), (d) and (e)

occurs in any order. (Bailey pg 5, l 6; pg 5, ll 10-11: TUF utilizes TCP communications

for layered communications; TCP, IP, lower layer (L2) communications processing;

TCP/IP processing (implies L3, L4 processing); pg 4, ll 35-38: TCP segments arrive out

of order, TUF protocol finds ULPDU headers in TCP stream even when TCP segments

are out of order, recovery of out of order ULPDUs processing)

Regarding Claim 46, Bailey discloses the method according to claim 45, wherein at

least two of the performing of (b), (c), (d) and (e) occurs concurrently. (Bailey pg 5, l 6;

pg 5, ll 10-11: TUF utilizes TCP communications for layered communications; TCP, IP,

lower layer (L2) communications processing; TCP/IP processing (implies L3, L4

processing); pg 4, ll 35-38: if TCP segments arrive out of order, TUF protocol finds

ULPDU headers in TCP stream even when TCP segments are out of order, recovery of

out of order ULPDUs processing)

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

8.   Claims **14, 15, 26, 28, 32** are rejected under 35 U.S.C. 103 (a) as being

unpatentable over Bailey in view of **Pinkerton et al.** (US Patent No. **7,124,198**).

Regarding Claim 14, Bailey discloses the system according to claim 1, wherein the

receiver comprises a buffer. (Bailey pg 7, ll 30-32: direct data placement by NIC into

application buffers)

Bailey does not explicitly disclose to scale approximately linearly with a network speed

or a network bandwidth. However, Pinkerton discloses wherein the size of the buffer

does not scale approximately linearly with a network speed or a network bandwidth.

(Pinkerton col 3, ll 52-67: bandwidth considerations processing ULPDUs; buffer size

does not scale with network speed)

        It would have been obvious to one of ordinary skill in the art to modify Bailey to

scale approximately linearly with a network speed or a network bandwidth as taught by

Pinkerton.   One of ordinary skill in the art would have been motivated to employ the

teachings of Pinkerton in order to eliminate the need for an intermediate reassembly

buffer in the performance path.   (Pinkerton col 2, l 67 - col 3, l 3)

Regarding Claim 15, Bailey discloses the system according to claim 1, wherein the

receiver comprises a buffer. (Bailey pg 7, ll 30-32: direct data placement by NIC into

application buffers)

Bailey does not explicitly disclose to scale with the number of connections.

However, Pinkerton discloses wherein the size of the buffer does not scale with the

number of connections. (Pinkerton col 3, ll 52-67: bandwidth considerations processing

ULPDUs; buffer size not dependent on number of connections)

Motivation for Pinkerton to disclose to scale with the number of connections is as stated

in Claim 14 above.

Regarding Claim 26, Bailey discloses the method according to claim 25, further

comprising: to copy data of the FPDU from the network subsystem to a host memory.

(Bailey pg 7, ll 30-32: direct data placement by NIC into application buffers)

Bailey does not explicitly disclose programming a direct memory access (DMA) engine.

However, Pinkerton discloses programming a direct memory access (DMA) engine.

(Pinkerton col 2, ll 10-13: DMA (direct memory access) protocol; col 3, ll 52-58; col 3, ll

63-67: direct data placement; maps incoming data to a specific buffer and offset; col 8, ll

1-3: direct placement information placed in framing header)

Motivation for Pinkerton to disclose a direct memory access (DMA) engine is as stated

in Claim 14 above.

Regarding Claim 28, Bailey discloses the method according to claim 22 wherein a TPS

comprises a plurality of complete FPDUs.   (Bailey pg. 11, ll 36 - pg 12, l 4: determine

that ULPDU starts at beginning of segment, and subsequent ULPDUs contained in that

segment (more than one ULPDU contained in segment))

Regarding Claim 32, Bailey discloses a system for handling transport protocol

segments (TPSes), comprising: a receiver, wherein the receiver receives an incoming

TPS, the incoming TPS comprising an aligned upper layer protocol (ULP) header and a

complete ULP data unit (ULPDU), wherein the receiver to place the complete ULPDU

into a host memory. (Bailey pg 5, ll 20-22: place data (from framed ULPDU) in memory

on host; pg 6, ll 7-11: implementing direct data placement for TCP-based ULPs)

Bailey does not explicitly disclose a DMA engine.

However, Pinkerton discloses a DMA engine. (Pinkerton col 2, ll 10-13: DMA (direct

memory access) protocol; col 3, ll 52-58; col 3, ll 63-67: direct data placement; maps

incoming data to a specific buffer and offset; col 8, ll 1-3: direct placement information

placed in framing header)

Motivation for Pinkerton to disclose a DMA engine is as stated in Claim 14 above.

9.   Claim **17** is rejected under 35 U.S.C. 103 (a) as being unpatentable over **Bailey**

in view of **Wilson et al.** (US Patent No. **7,031,904**).

Regarding Claim 17, Bailey discloses the system according to claim 1.

Bailey does not explicitly disclose CRC values.

However, Wilson discloses wherein the receiver does not store partial cyclical

redundancy check (CRC) values. (Wilson col 12, ll 11-13: include MAC header and a

cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header is added to packet

followed by CRC portion, CRC check increases data integrity)

It would have been obvious to one of ordinary skill in the art to modify Bailey to for

CRC values as taught by Wilson.   One of ordinary skill in the art would have been

motivated to employ the teachings of Wilson for the benefits of fast and efficient

utilization of communications within multiple type of network environments. (Wilson col

3, ll 6-9)

10.   Claims **27, 33 - 44** are rejected under 35 U.S.C. 103 (a) as being unpatentable

over **Bailey- Pinkerton** and further in view of **Wilson**.

Regarding Claim 27, Bailey discloses the method according to claim 26.

Bailey does not explicitly disclose programming the DMA engine.

However, Pinkerton discloses programming the DMA engine. (Pinkerton col 2, ll 10-13:

DMA (direct memory access) protocol; col 3, ll 52-58; col 3, ll 63-67: direct data

placement; maps incoming data to a specific buffer and offset; col 8, ll 1-3: direct

placement information placed in framing header)

Motivation for Pinkerton to disclose programming the DMA engine is as stated in Claim

14 above.

Bailey does not explicitly disclose a CRC machine.

However, Wilson discloses to move FPDU through a cyclical redundancy checking

(CRC) machine. (Wilson col 12, ll 11-13: includes MAC header and cyclic redundancy

check (CRC) portion; col 15, ll 6-10: MAC header added to packet followed by CRC

portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC machine is as stated in Claim 17 above.

Regarding Claim 33, Bailey discloses the system according to claim 32.

Bailey does not explicitly disclose a CRC machine.

However, Wilson discloses wherein the receiver comprises a cyclical redundancy check

(CRC) machine, and wherein the receiver uses the CRC machine once per ULPDU.

(Wilson col 12, ll 11-13: include MAC header and a cyclic redundancy check (CRC)

portion; col 15, ll 6-10: MAC header is added to packet followed by CRC portion, CRC

check increases data integrity)

Motivation for Wilson to disclose a CRC machine is as stated in Claim 17 above.

Regarding Claim 34, Bailey discloses the system according to claim 33, wherein the

receiver comprises a non-flow-through network interface card (NIC). (Bailey pg 7, ll 30-

32: direct data placement by NIC (network interface) into designated application buffers)

Bailey does not explicitly disclose a DMA engine.

However, Pinkerton discloses a DMA engine. (Pinkerton col 2, ll 10-13: DMA (direct

memory access) protocol; col 3, ll 52-58; col 3, ll 63-67: direct data placement; maps

incoming data to a specific buffer and offset; col 8, ll 1-3: direct placement information

placed in framing header)

Motivation for Pinkerton to disclose a DMA engine is as stated in Claim 14 above.

Bailey does not explicitly disclose a CRC machine.

However, Wilson discloses the CRC machine. (Wilson col 12, ll 11-13: includes MAC

header and cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header added

to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC machine is as stated in Claim 17 above.

Regarding Claim 35, Bailey discloses the system according to claim 34, wherein the

non-flow-through NIC comprises a local memory. (Bailey pg 7, ll 30-32: direct data

placement by NIC (network interface) into designated application buffers (memory))

Regarding Claim 36, Bailey discloses the system according to claim 35, wherein the

non-flow-through NIC as the complete ULPDU is stored in the local memory. (Bailey pg

7, ll 30-32: direct data placement by NIC (network interface) into designated application

buffers)

Bailey does not explicitly disclose a CRC calculation.

However, Wilson discloses a CRC calculation. (Wilson col 12, ll 11-13: includes MAC

header and cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header added

to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC calculation is as stated in Claim 17 above.

Regarding Claim 37, Bailey discloses the system according to claim 35, wherein the

non-flow-through NIC after the complete ULPDU is stored in the local memory. (Bailey
pg 7, ll 30-32: direct data placement by NIC (network interface) into designated
application buffers)

Bailey does not explicitly disclose a CRC calculation.

However, Wilson discloses a CRC calculation. (Wilson col 12, ll 11-13: includes MAC
header and cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header added
to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC calculation is as stated in Claim 17 above.

Regarding Claim 38, Bailey discloses the system according to claim 35, wherein the
non-flow-through NIC during a process by which the complete ULPDU is sent from the
local memory to a host memory. (Bailey pg 5, ll 20-22: based on information in ULPDUs
place data in memory in host)

Bailey does not explicitly disclose a CRC calculation.

However, Wilson discloses a CRC calculation. (Wilson col 12, ll 11-13: includes MAC
header and cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header added
to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC calculation is as stated in Claim 17 above.

Regarding Claim 39, Bailey discloses the system according to claim 35, wherein the
complete ULPDU comprises a marker-aligned protocol data unit. (Bailey pg 11, l 36 –
pg 12, l 4: ULPDU completely contained with TCP segment; pg 7, ll 30-32: direct data

placement from network interface into application buffers)

Regarding Claim 40, Bailey discloses the system according to claim 33, wherein the

receiver comprises a flow-through NIC. (Bailey pg 7, ll 30-32: direct data placement by

NIC (network interface controller) into designated application buffers)

Bailey does not explicitly disclose a DMA engine.

However, Pinkerton discloses a DMA engine. (Pinkerton col 2, ll 10-13: DMA (direct

memory access) protocol; col 3, ll 52-58; col 3, ll 63-67: direct data placement; maps

incoming data to a specific buffer and offset; col 8, ll 1-3: direct placement information

placed in framing header)

Motivation for Pinkerton to disclose a DMA engine is as stated in Claim 14 above.

Bailey does not explicitly disclose a CRC machine.

However, Wilson discloses a CRC machine. (Wilson col 12, ll 11-13: include MAC

header and a cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header is

added to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC machine is as stated in Claim 17 above.

Regarding Claim 41, Bailey discloses the system according to claim 40, wherein the

flow-through NIC comprises a buffer. (Bailey pg 5, ll 20-22: protocol maintained for

communications, place data in memory (buffer) on host; pg 7, ll 30-32: direct data

placement by NIC (network interface controller) into designated application buffers)

Regarding Claim 42, Bailey discloses the system according to claim 41 and the non-flow-through NIC as the complete ULPDU is stored in the buffer.

Bailey does not explicitly disclose CRC calculations.

However, Wilson discloses CRC calculations. (Wilson col 12, ll 11-13: include MAC header and a cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header is added to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose CRC calculations is as stated in Claim 17 above.

Regarding Claim 43, Bailey discloses the system according to claim 41 and an ULP.

Bailey does not explicitly disclose a CRC calculation.

However, Wilson discloses the CRC calculation. (Wilson col 12, ll 11-13: include MAC header and a cyclic redundancy check (CRC) portion; col 15, ll 6-10: MAC header is added to packet followed by CRC portion, CRC check increases data integrity)

Motivation for Wilson to disclose a CRC calculation is as stated in Claim 17 above.

Regarding Claim 44, Bailey discloses the system according to claim 40, wherein the complete ULPDU comprises a marker-aligned protocol data unit. (Bailey pg 11, l 36 - pg 12, l 4: ULPDU completely contained with TCP segment (complete ULPDU); pg 7, ll 30-32: direct data placement by network interface into application buffers)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyung Hye Shin whose telephone number is (571) 272-3920. The examiner can normally be reached on 9:30 am - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L. Dollinger can be reached on (571) 272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5-20-2010   /Kyung Hye Shin/
                                                   Examiner, Art Unit 2443